WACKER

CREATING TOMORROW'S SOLUTIONS



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PRODUCT OVERVIEW
VINNAPAS® POLYMER POWDERS

VINNAPAS®

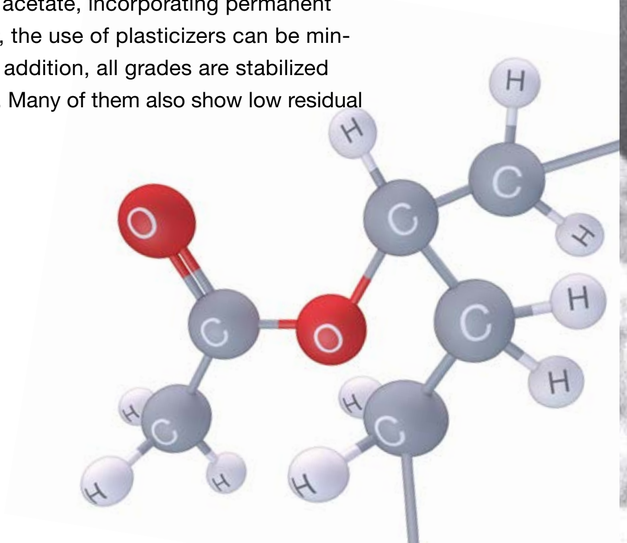
POLYMER CHEMISTRY – A KEY TO QUALITY

Polymer binders have revolutionized the construction and paint industry more than once. WACKER has been a key player in this development. Show Milestones

Vinyl Acetate-Ethylene (VAE) – Serving the Megatrends of Today and Tomorrow

VINNAPAS® polymer binders are co- and terpolymers based on vinyl acetate, ethylene and other monomers. Vinyl acetate-ethylene (VAE), in particular, combines technical performance with environmental benefits at an attractive cost-in-use ratio.

VAE dispersions are produced by the emulsion polymerization of the hard, polar monomer vinyl acetate and the soft, hydrophobic monomer ethylene. Ethylene functions as an optimal flexibilizer for vinyl acetate, incorporating permanent flexibility into VAE polymers. Consequently, the use of plasticizers can be minimized when formulations contain VAEs. In addition, all grades are stabilized without the use of APEO-based surfactants. Many of them also show low residual monomer content (<500 ppm).
Compliance with Strict Labels



Polymer binders enhance two critical characteristics of all mortars and coatings: adhesion and flexibility. They ensure the quality of buildings and prolong their life expectancy, while reducing material consumption. At the same time, they increase creative freedom by making it possible to combine a wide variety of construction materials.

VINNAPAS® and PRIMIS® are registered trademarks of Wacker Chemie AG.

The Fast Track:

PRODUCT FINDER

Typical General Properties			Grade	Recommended Applications							
Polymer Base	Flexibility	MFFT (ISO 2115) [°C]	Product Name	Tile Adhesives	Tile Grouts	Self-Leveling Compounds	Wall and Joint Fillers	Concrete Repair	ETICS	Waterproofing Membranes	Renders and Plasters
Neutral											
VAc-E	Semi-flexible	1	VINNAPAS® 4023 N	●●					●●		
VAc-E	Semi-flexible	1	VINNAPAS® 4121 N	●●			●●				
VAc-E	Very flexible	0	VINNAPAS® 4240 N				●	●	●●	●	●
VAc-E	Hard	11	VINNAPAS® 5005 N	●	●		●●				●
VAc-E	Hard	4	VINNAPAS® 5010 N	●●	●●		●●				●●
VAc-E	Very flexible	0	VINNAPAS® 5043 N						●●		
VAc-E	Very flexible	0	VINNAPAS® 5044 N				●	●●	●●	●●	
Enhanced											
VAc-E	Very flexible	0	VINNAPAS® 4040 E		●		●●		●		●
VAc-E	Semi-flexible	4	VINNAPAS® 5028 E	●●							
VAc-E-others	Flexible	0	VINNAPAS® 7034 E		●		●	●●	●		●●
VAc-E-others	Highly flexible	0	VINNAPAS® 7055 E					●	●	●●	
VAc-E-others	Hard	7	VINNAPAS® 7210 E	●●	●				●	●●	●
VAc-E-others	Semi-flexible	5	VINNAPAS® 7220 E	●●	●						
VAc-VC-E	Hard	4	VINNAPAS® 8118 E	●●							
VAc-VC-E	Semi-flexible	5	VINNAPAS® 8620 E	●●							
Hydrophobic											
VC-E	Flexible	0	VINNAPAS® 3030 H		●●						●
VAc-E	Very flexible	0	VINNAPAS® 4042 H						●●	●●	●
VAc-E	Very flexible	0	VINNAPAS® 5048 H						●●	●●	●●
VAc-E	Hard	4	VINNAPAS® 5518 H		●●					●●	●●
VAc-E-others	Flexible	0	VINNAPAS® 7031 H		●●		●●	●	●	●	●●
VC-E-others	Flexible	0	VINNAPAS® 8031 H		●●					●	●
VC-E-others	Flexible	0	VINNAPAS® 8034 H		●●				●	●	●●

Recommended Applications: ●● Highly recommended ● Recommended

N **VINNAPAS® N Class – Neutral Effect on Rheology**
These products provide a high degree of freedom in developing formulations and are ideal for various applications.

E **VINNAPAS® E Class – Enhanced Properties**
These products have enhanced properties in a number of applications and improve essential characteristics. They ensure improved workability, increased adhesion or water resistance, to name just a few.

H **VINNAPAS® H Class – Hydrophobic Excellence**
These products have remarkable hydrophobic properties, making them ideal for all types of plasters and tile grouts as well as for ETICS (external thermal insulation composite systems).

The Fast Track:

PRODUCT FINDER

Typical General Properties			Grade	Recommended Applications							
Polymer Base	Flexibility	MFFT (ISO 2115) [°C]	Product Name	Tile Adhesives	Tile Grouts	Self-Leveling Compounds	Wall and Joint Fillers	Concrete Repair	ETICS	Waterproofing Membranes	Renders and Plasters
Thixotropic											
VAc-E	Hard	4	VINNAPAS® 5012 T	●●			●●				
VAc-E	Semi-flexible	4	VINNAPAS® 5021 T	●●			●●				
VAc-E	Very flexible	0	VINNAPAS® 5046 T				●●		●		
Leveling											
VAc-E	Hard	4	VINNAPAS® 4220 L			●●					
VAc-E	Semi-flexible	4	VINNAPAS® 4410 L			●●					
VAc-E	Semi-flexible	4	VINNAPAS® 5025 L			●●					
VAc-E	Hard	4	VINNAPAS® 5111 L			●●					
VAc-E	Semi-flexible	4	VINNAPAS® 5222 L			●●					
Flow											
VAc-E	Hard	4	VINNAPAS® 5014 F			●●					
VAc-E-MMA	Hard	7	VINNAPAS® 7016 F			●●					

Recommended Applications: ●● Highly recommended ● Recommended

T **VINNAPAS® T Class – Thixotropic Expertise**
These products are used in thixotropic tile adhesives and in troweling compounds.

L **VINNAPAS® L Class – Leveling Optimization**
These products create smooth surfaces by displaying excellent leveling properties. They are therefore ideal for self-leveling compounds.

F **VINNAPAS® F Class – Flow Superiority**
These products provide excellent flow properties without the need for any additional synthetic superplasticizers or casein. They are therefore ideal for self-leveling compounds that require an instant liquefying effect and a special rheology.

The Perfect Fit:

RECOMMENDATION BY APPLICATION

Tile Adhesives

Grade	Product Benefit	Performance Attributes		
		Tensile Adhesion Strength after:		
Product Name		Open Time EN 12004-2:2017	Heat Aging EN 12004-2:2017	Water Immersion EN 12004-2:2017
Neutral				
VINNAPAS® 4023 N	Good tensile adhesion strength on inorganic surfaces even after water immersion.	●●	●●	●●
VINNAPAS® 4121 N	Very good tensile adhesion strength on inorganic surfaces especially after heat aging.	●	●●●	●
VINNAPAS® 5010 N	Very good tensile adhesion strength on inorganic surfaces especially after heat aging.	●●	●●●	●
Enhanced				
VINNAPAS® 5028 E	Long open time and good tensile adhesion strength after water immersion.	●●●	●●	●●
VINNAPAS® 7210 E	Long open time and very good tensile adhesion strength after water immersion and heat aging.	●●●	●●●	●●
VINNAPAS® 7220 E	Very good workability and excellent tensile adhesion strength after water immersion.	●●	●●●	●●●
VINNAPAS® 8118 E	Long open time and excellent tensile adhesion strength after heat aging.	●●●	●●●	●●
VINNAPAS® 8620 E	Long open time and excellent tensile adhesion strength even after water immersion.	●●●	●●	●●●
Thixotropic				
VINNAPAS® 5012 T	Very good tensile adhesion strength after standard conditions.	●●	●●●	●
VINNAPAS® 5021 T	Long open time and good tensile adhesion strength especially after water immersion.	●●●	●●	●●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

Tile Grouts

Grade Product Name	Product Benefit	Performance Attributes Hydrophobic Effect	 Workability	 Cleaning Properties after Initial Setting
Neutral				
VINNAPAS® 5010 N	Very good workability and very good cleaning properties after first setting.	○	●●●	●●●
Hydrophobic				
VINNAPAS® 3030 H	Excellent hydrophobic effect, very high mechanical strength and low stickiness.	●●●	●●	●●
VINNAPAS® 5518 H	Strong hydrophobic effect, very good workability, high mechanical strength and good cleaning. properties after initial setting.	●●	●●●	●●●
VINNAPAS® 7031 H	Hydrophobic effect and very good workability.	●	●●●	●●
VINNAPAS® 8031 H	Slight hydrophobic effect, good workability and low stickiness.	●	●	●●
VINNAPAS® 8034 H	Strong hydrophobic effect, good workability and low stickiness.	●●	●	●●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

Self-Leveling Compounds

Grade	Product Benefit	Performance Attributes		
Product Name		**Flow Support**	**Defoaming**	**Stabilization**
Leveling				
VINNAPAS® 4220 L	Basic leveling and defoaming for low-VOC products.	●●	●	●●
VINNAPAS® 4410 L	Excellent defoaming properties for very smooth, flat surfaces and good stabilization against water over-dosage.	●●	●●●	●●●
VINNAPAS® 5025 L	Good defoaming properties for smooth surfaces and very good tolerance against water over-dosage.	●●	●	●●●
VINNAPAS® 5111 L	Very good defoaming properties at low viscosity for very smooth, flat surfaces for end products with very low emissions.	●●●	●●	●
VINNAPAS® 5222 L	Very good defoaming properties at low viscosity for smooth, flat surfaces.	●●●	●●	●
Flow				
VINNAPAS® 5014 F	Instant plasticizing effect especially for pumpable systems with shear-thinning rheological properties.	●●●	●	●
VINNAPAS® 7016 F	Instant plasticizing effect with casein-like rheology and very good self-healing effect especially for manually applied systems.	●●●	●	●●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

Wall and Joint Fillers

Grade	Product Benefit	Performance Attributes		
Product Name		**Hydrophobicity**	**Thixotropy**	**Workability**
Neutral				
VINNAPAS® 5005 N	Good tensile adhesion strength and good workability.	○	○	●●
VINNAPAS® 5010 N	Very good tensile adhesion strength on all surfaces and good workability.	○	○	●●
Hydrophobic				
VINNAPAS® 7031 H	Hydrophobic effect, very good workability and very good tensile adhesion strength.	●●	○	●●●
Thixotropic				
VINNAPAS® 5012 T	Thixotropic, very good workability and very good tensile adhesion strength.	○	●●	●●●
VINNAPAS® 5021 T	Thixotropic, very good workability, long open time and good tensile adhesion strength.	○	●●	●●●
VINNAPAS® 5046 T	Strongly thixotropic, very good workability.	○	●●●	●●●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

Concrete Repair

Grade	Product Benefit
Product Name	
Neutral	
VINNAPAS® 5044 N	Very good tensile adhesion strength on all surfaces.
Enhanced	
VINNAPAS® 7034 E	Excellent workability and good tensile adhesion strength on all surfaces.

ETICS

Grade	Product Benefit	Performance Attributes		
Product Name		**Tensile Adhesion Strength**	**Impact Resistance**	**Hydrophobicity**
Neutral				
VINNAPAS® 4023 N	Very good tensile adhesion strength particularly on organic surfaces, high impact strength and good workability.	●●●	●●	○
VINNAPAS® 4121 N	Very good tensile adhesion strength particularly on organic surfaces, good impact strength and good workability.	●●●	●	○
VINNAPAS® 4240 N	Very good tensile adhesion strength particularly on organic surfaces and high impact strength.	●●●	●	○
VINNAPAS® 5043 N	Very good tensile adhesion strength particularly on organic surfaces, very high impact strength and good workability.	●●●	●●●	○
VINNAPAS® 5044 N	Very good tensile adhesion strength particularly on organic surfaces, very high impact strength and very good workability – versatile use in all ETICS formulations.	●●●	●●●	○
Hydrophobic				
VINNAPAS® 4042 H	Slight hydrophobic effect, very good tensile adhesion strength particularly on organic surfaces and very high impact strength.	●●●	●●●	●●
VINNAPAS® 5048 H	Strong hydrophobic effect, very good tensile adhesion strength particularly on organic surfaces and very high impact strength.	●●●	●●●	●●●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

Waterproofing Membranes

Grade Product Name	Product Benefit	Adhesion on Critical (Especially Organic) Surfaces
Neutral		
VINNAPAS® 5044 N	Very good tensile adhesion strength on all surfaces and good crack-bridging properties.	●●●
Enhanced		
VINNAPAS® 4040 E	Very flexible dispersible polymer powder with very good tensile adhesion strength and very good crack-bridging properties combined with improved workability.	●●●
VINNAPAS® 7055 E	Very good tensile adhesion strength particularly on all surfaces and very good crack-bridging properties even at low temperatures.	●●●
Hydrophobic		
VINNAPAS® 4042 H	Slight hydrophobic effect and very good tensile adhesion strength.	●●●
VINNAPAS® 5048 H	Very strong hydrophobic effect and very good tensile adhesion strength.	●●●
VINNAPAS® 5518 H	Strong hydrophobic effect, very good workability and high mechanical strength.	●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

Renders and Plasters

Grade	Product Benefit		
Product Name		**Tensile Adhesion Strength**	**Hydrophobicity**
Neutral			
VINNAPAS® 5010 N	Very good tensile adhesion strength on inorganic surfaces and good workability.	●●●	○
Enhanced			
VINNAPAS® 7034 E	Excellent workability and very good tensile adhesion strength.	●●●	●
Hydrophobic			
VINNAPAS® 5048 H	Strong hydrophobic effect and very good tensile adhesion strength.	●●●	●●●
VINNAPAS® 5518 H	Strong hydrophobic effect, very good workability and very good tensile adhesion strength.	●●●	●●●
VINNAPAS® 7031 H	Hydrophobic effect, very good workability and very good tensile adhesion strength.	●●●	●●
VINNAPAS® 8034 H	Strong hydrophobic effect, good workability and very good tensile adhesion strength.	●●●	●●●

Based on WACKER guide formulation: ●●● Excellent ●● Very Good ● Good ○ Neutral

CREATING TOMORROW'S SOLUTIONS

A Diverse Array of Products for Growing Markets

Our product portfolio ranges from silicones, binders and polymeric additives all the way up to bioengineered pharmaceutical actives. Rounding these out is hyperpure silicon for semiconductors and solar applications.

Innovations that Improve Quality of Life

Resource scarcity, climate change, urbanization: the challenges of our time demand new responses. In our search for solutions, we invest some 3.5% of our annual sales in research and development. With their emphasis on using energy efficiently and protecting the climate and our environment, our products are already improving quality of life for people all over the world.

Global Knowledge for Local Markets

When you work with WACKER, you have 100 years of chemistry expertise at your disposal, with access to the research findings and best practices of our experts throughout the world. Our knowledge base consists of a network of 22 technical centers, 13 training centers and our basic research center.

And most importantly: we are there wherever you need us – worldwide. Our local specialists know your markets and speak your language. Working with them, you will find innovative solutions that win over your customers and make you more competitive.

Follow us:
Find us on LinkedIn, YouTube and Twitter, and we'll keep you up to date on the latest and discuss current issues with you.

All figures are based on fiscal 2018.

Silicones and Polymers

3,200 specialty products from organic and inorganic chemistry

Global Market Leader

In dispersions and dispersible polymer powders based on vinyl acetate-ethylene (VAE), in building-protection silicones and in the production of cyclodextrin and cystein.

Globally Active

- Sites worldwide
- Headquartered in Munich
- 24 production sites in Europe, Asia and the Americas
- 22 technical centers
- 13 WACKER ACADEMY training centers
- 50 sales offices

Employees: 14,500

Total Sales

€4,98 billion



WACKER

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